

AECENE TC 1700

Appl. No.

09/682,923

Applicant

ADEDEJI et al.

Filed

November 1, 2001

TC/A.U.

1711

Examiner

J. Mullis

Assignee Docket No.:

08CN6028-2

Attorney Docket No.:

GP2-0187

Customer No.

23413

Via Facsimile (703) 872-9310, TC Group 1700 Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

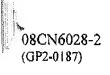
DECLARATION UNDER 37 C.F.R. § 1.132

I, Thomas J. Hartle, declare and state:

- 1. My educational background includes a B.S. in Chemistry from Moravian College (1995), and a Ph.D. in Chemistry from the Pennsylvania State University (2000).
- 2. I have been employed by the General Electric Company since June, 2000, where I am currently a Product Development Specialist in the NORYL® Technology Department of GE Plastics.
- 3. I am an inventor or co-inventor on at least three issued U.S. patents and at least eight pending U.S. patent applications relating to thermoplastic compositions, methods, and articles.
 - 4. I am an applicant on the above-identified application.



5. I designed and supervised the testing of three samples to determine the effect on low-temperature impact strength of the block copolymer components. Compositions and properties are summarized in the Table, below. All samples contained 19.95 weight percent of poly(2,6-dimethyl-1,4-phenylene ether), 34.91 weight percent of homopolystyrene, 34.91 weight percent of polypropylene, 0.05 weight percent of magnesium oxide, 0.05 weight percent of zinc sulfide, 0.15 weight percent of tridodecyl phosphite, and 9.98 weight percent of total block copolymer. In Comparative Example A, the block copolymer consisted of a hydrogenated block copolymer that was a styrene-(ethylene-butylene)-styrene block copolymer having a total polystyrene content of 66 weight percent. In Comparative Example B, the block copolymer consisted of an unhydrogenated block copolymer that was a styrenebutadiene-styrene block copolymer having a styrene content of 28 weight percent. In Example A, the block copolymer consisted of a 50:50 weight/weight blend of the hydrogenated block copolymer and the unhydrogenated block copolymer from the comparative examples. Each composition was compounded and molded into bars for impact strength testing. Unnotched Izod impact strengths, expressed in foot-pounds/inch, were measured at -30°C according to ASTM D256. Although one would have expected the impact strength of the composition with the copolymer blend to be in between those of the composition with the hydrogenated copolymer alone and the composition with the unhydrogenated copolymer alone, it was instead much greater. Specifically, the Example A composition containing 4.99 weight percent each of a hydrogenated styrene-butadienestyrene triblock copolymer and an unhydrogenated styrene-butadiene-styrene triblock copolymer exhibited an Unnotched Izod impact strength value at -30°C of 11.98 foot-



pounds/inch, which is 85.2% greater than the value of 6.47 foot-pounds/inch exhibited by the Comparative Example A composition with 9.98 weight percent of the hydrogenated block copolymer alone, and 148% greater than the value of 4.84 foot-pounds/inch exhibited by the Comparative Example B composition with 9.98 weight percent of the unhydrogenated block copolymer alone. There is therefore a substantial synergistic effect for the combination of the hydrogenated block copolymer and the unhydrogenated block copolymer.

Table

	C. Ex. A	C. Ex. B	Ex. A
Poly(arylene ether) (wt%)	19.95	19.95	19.95
Homopolystyrene (wt%)	34.91	34.91	34.91
Polypropylene (wt%)	34.91	34.91	34.91
Magnesium oxide (wt%)	0.05	0.05	0.05
Zinc sulfide (wt%)	0.05	0.05	0.05
Tridodecyl phosphite (wt%)	0.15	0.15	0.15
Hydrogenated block copolymer (wt%)	9.98		4.99
Unhydrogenated block copolymer (wt%)		9.98	4.99
Unnotched Izod at -30°C (ft-lb/in)	6.47	4.84	11.98

6. I further declare that all statements and representations made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements and representations were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued therefrom.

08/22/03

Dated

Thomas J. Hartle, Ph.D.

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- 2. We conceived in the United States the invention disclosed and claimed in the above-identified patent application prior to September 29, 2000 and then diligently reduced the invention to practice in the United States prior to September 29, 2000.
- 3. As evidence in support of this prior conception and reduction to practice, submitted herewith is the following evidence of activity done in the United States. The

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4. The undersigned declares that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

Date: 8 25 2003	Adeyinka Adedeji
Date:	
	Thomas J. Hartle
Date:	
	John C. Havlock

EXHIBIT

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Date:		
	Adeyinka Adedeji	
Date: 08/22/03	Thomas J. Hartle	
	Thomas J. Hartle	
Date:		
	John C. Haylock	<u> </u>

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EXHIBIT

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Date:		·
-		Thomas J. Hartle
Date: _	Aug. 25th 2003	John C. Henrioch
		John C. Haylock



RECEIVED Aug 2 9 2003 TC 1700

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